

Appl. No.: 09/881,620
Reply to Office Action of Apr. 01, 2003

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REMARKS/ARGUMENTS

Favorable consideration of this application is respectfully requested. Applicant has provided reference material that explains the difference between EUV and XUV; amended claims 1, 7, 9, 10-13 and 34; and cancelled claim 6, and added new claims 43-75. Favorable reconsideration of this application is, consequently, earnestly solicited in view of the following remarks.

Claims 4 and 5 were rejected under sec. 112, second paragraph for not having an apparent distinction between EUV and XUV. Applicants have provided an explanation of spectral categories as defined by the International Standards Organization (ISO). Distinct regions in the solar spectrum are identified in nanometer (nm) ranges: XUV rays are between 10nm to 30 nm; EUV rays are between 30nm to 120 nm in length. ("The Solar Spectrum, and it's Relationship to Earth's Thermosphere" updated Nov. 2002 - re: search- www.google.com on July 10, 2003.) Applicant has consistently used the terms, EUV and XUV, in the title, throughout the specification and claims; the terms are understood to be specific and distinct spectral regions. Thus, removal of this rejection is respectfully requested.

Claim 6 is currently cancelled, because it is now incorporated into currently amended claim 1.

Claim 9 is amended to correct a typographical error; changing "solutions" to --solution--, so that the wording is now grammatically correct.

Claims 10-13 were rejected under sec. 112, second paragraph for being indefinite for improper statement of the dependent claim, which has now been accordingly amended; thus, removal of this rejection is respectfully requested. Applicant appreciates Examiner's note that "... these claims are meant to depend from claim 9 instead of claim 7."

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Claims 1-6, 9-10, and 27-28 were rejected under 35 USC SEC. 102(e) as being anticipated by Foster et al. '913. The rejection states that "Foster et al. discloses a method of producing EUV or X-rays comprising forming a metallic solution and passing it into a target source, and irradiating it with a laser to produce debris free emissions." Further grounds for rejection are based on the assertion that "... the target includes zinc chloride and forms micropellets." The Examiner has taken the bases for rejection out of context.

First, the invention described by Foster et al. is not functionally equivalent to Applicant's invention. Foster et al. uses targets which are described as "clusters" of micropellets that are hit with "shaped laser light." See Foster et al., column 10, lines 13-17. Whereas, Applicant uses microscopic type targets of a micrometer type size, to convert a near-point plasma light source in the desired spectrum. Applicant does not use "shaped laser light." Applicant does not use targets as large as micropellets or clusters of micropellets and would find such large targets unsuitable for the desired results.

The Examiner refers to column 10, lines 22-24 in Foster et al., as teaching that the liquid target may include zinc chloride. The entire teaching is that "The liquid target material may optionally be treated with additives to control the emission spectrum. By way of example, zinc chloride may be used as additives.", (Column 3, lines 2-3, and Column 10, lines 23-24) It should be noted that the liquid target identified in Foster et al. is "water or liquid xenon", (Column 3, lines 1-3), and preferably is described as "... a liquefied gas, such as xenon, or other inert gas." (Column 10, lines 18,19). Applicant does not use liquefied gases, but uses liquid metallic solutions at room temperature in all the independent claims, and further defines the room temperature ranges in several dependent claims. Foster et al. do not mention temperature conditions. Equally important is the distinction between the target materials. Zinc chloride is used as an additive in the invention of Foster et al., while Applicant used zinc chloride primarily as the target liquid metallic solution. It is a creative and courageous departure for a researcher to take an "additive" and use it as the entire target material. It is tantamount to choosing an entire block of salt for consumption rather than taking a small amount of salt for seasoning.

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Another distinction between the work of Foster et al. and Applicant's is the size of the target materials. The "micropellets" in Foster et al. are not defined; thus could not provide Applicant with any guidance as to the choice of droplet size. Claims 1 and 34 have now been amended to clarify the size of the "microscopic droplets" of liquid metallic solutions and thus, more clearly distinguish the present invention from others. Further dependent claims claim additional novel droplet diameter sizes that are also not described, taught, nor suggested by Foster et al.

Thus, we have at least four major distinctions between Applicant's invention and the disclosure in Foster et al: different laser light sources, different operating temperatures and conditions, different target materials and different sizes of target material. As such, Foster et al. cannot stand as a reference that anticipates Applicant's invention; removal of this rejection is respectfully requested.

Claims 7, 8, 11-26, and 29-42 were rejected under sec. 103 (a) as being obvious, in view of, and unpatentable over Foster et al. '913. The rejection states "Foster et al. discloses all of the elements of applicant's claimed invention except for the specific additive, the size of the droplets, and the laser beam size being the same as the droplet size." The rejection glosses over the differences identified by the Examiner and further argues that, "Foster et al. clearly teaches that the solution can be selected to 'control the emission spectrum' (column 10, lines 22-24)." Applicant respectfully disagrees. Applicant does not use an additive in the target material; instead, Applicant uses microscopic type liquid metals as the target material.

Claims 1 and 34 have now been amended to clarify the droplet size of the "metallic solution" referenced in claim 1 and the "microscopic liquid metal droplets" referenced in claim 34. The droplet sizes are described in the subject invention on page 10, lines 41-43, and page 11, lines 1-2.

Claim 1 is now further amended to identify the metallic solution. Claim 1 now reads, in part, "forming a metallic solution that includes molecular liquids or mixtures of elemental and molecular liquids at room temperature;" This feature is described in the subject invention on

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page 5, lines 6-7; 10-14. There is no description, teaching, nor suggestion in Foster et al. for these novel claimed features.

The mere fact that someone in the art can rearrange parts of a reference to meet the terms of a claim is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for someone of ordinary skill in the art, without the benefit of the inventor's specification to make the necessary changes in the reference device. Ex parte Chicago Rawhide Mfg. Co., 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984).

There is no teaching, nor suggestion for modifying Foster et al. to include all the novel features of amended claims 1 and 34. Under well-recognized rules of the MPEP (for example, section 706.02(j)), the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claims 7, 8, 11-26, and 29-42 were rejected further over Foster et al. Applicants disagree with the statements that "Official Notice is taken that the metallic additives set forth in the claims are well known equivalents to Zinc Chloride, and it would have been obvious to one of ordinary skill in the art to employ any of these motivated by the benefits to controlling the spectrum as discussed by Foster et al."

It is clearly improper to arbitrarily ignore any of the novel features of the claims and mislabel Applicant's liquid metal targets as additives that are used in Foster et al. Under the rules of the MPEP, if the applicant requests the examiner cite the reference(s) showing each and every one of the references that supports a rejection, the examiner must cite the reference or remove the rejection. Under MPEP 706.02 and 37 C.F.R. 1.107(b), applicant requests the examiner specifically point out which uncited reference(s) describes and teaches these unsubstantiated opinions and assertions raised in the rejection that the entire invention of claims 1-42 would be obvious under sec. 103. Under the MPEP and CFR sections cited above, the examiner must cite the reference(s) that shows these unsubstantiated opinions and assertions mentioned in their rejection, or remove the 103 rejection for at least these reasons alone.

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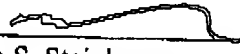
Applicant contends the references cannot be modified to incorporate the features of subject claims 1-42 without utilizing Applicant's disclosure. The courts have consistently held that obviousness cannot be established by combining the teachings of the prior art to Applicant to produce the claimed invention, absent some teaching, suggestion, incentive or motivation supporting the combination. In re Bond, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

If necessary, the applicant may be willing to provide an affidavit detailing further differences over the Foster et al. reference and why Foster et al. is not applicable here.

New claims 43-75 are believed allowable as well over Foster et al.

In view of the foregoing considerations, it is respectfully urged that claims 1-5, 7-42 and new claims 43-71 be allowed. Such action is respectfully requested. If the Examiner believes that an interview would be helpful, the Examiner is requested to contact the attorney at the below listed number.

Respectfully submitted,


Brian S. Steinberger
Registration No. 36,423
101 Brevard Avenue
Cocoa, Florida 32922
Telephone: (321) 633-5080

Date 8/1/03

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